

Claims

- [c1] An apparatus for providing dimming control of an electronic ballast circuit comprising:
- a plurality of input voltage terminals that can receive alternating current;
 - a plurality of fluorescent lamp terminals;
 - an electronic ballast circuit, wherein the electronic ballast circuit is electrically connected to the plurality of input voltage terminals that can receive alternating current and the electronic ballast circuit is electrically connected to the plurality of fluorescent lamp terminals;
 - at least one light sensor that is electrically connected to the electronic ballast circuit so that electrical power applied at the plurality of fluorescent lamp terminals can be proportionally modified in relationship to the ambient light received by the at least one light sensor; and
 - a plurality of switches that are electrically connected in one-to-one corresponding relationship to a plurality of resistive loads, wherein the plurality of switches and the plurality of resistive loads are electrically connected to the electronic ballast circuit so that the electrical power applied at the plurality of fluorescent lamp terminals can be set at a plurality of predetermined lighting levels.

- [c2] The apparatus for providing dimming control of an electronic ballast circuit as set forth in Claim 1, wherein the plurality of switches includes a plurality of dual-in-line package switches.
- [c3] The apparatus for providing dimming control of an electronic ballast circuit as set forth in Claim 2, wherein the plurality of dual-in-line switches includes at least three dual-in-line package switches.
- [c4] The apparatus for providing dimming control of an electronic ballast circuit as set forth in Claim 1, wherein the plurality of predetermined lighting levels can range from about forty percent (40%) to about one hundred percent (100%).
- [c5] The apparatus for providing dimming control of an electronic ballast circuit as set forth in Claim 1, wherein the plurality of predetermined lighting levels can range from about ten percent (10%) to about one hundred percent (100%).
- [c6] The apparatus for providing dimming control of an electronic ballast circuit as set forth in Claim 1, wherein the at least one light sensor includes a photocell.
- [c7] The apparatus for providing dimming control of an elec-

tronic ballast circuit as set forth in Claim 1, wherein the at least one light sensor is selected from the group consisting of a photoresistor, a photodiode, a phototransistor, a bipolar phototransistor, a photosensitive field-effect transistor and a light activated silicon-controlled rectifier.

[c8] The apparatus for providing dimming control of an electronic ballast circuit as set forth in Claim 1, wherein the plurality of switches that are electrically connected in series in one-to-one corresponding relationship to the plurality of resistive loads, the combination of the plurality of switches and the plurality of resistive loads are electrically connected in parallel to the at least one light sensor and the at least one light sensor is electrically connected in parallel to the electronic ballast circuit.

[c9] The apparatus for providing dimming control of an electronic ballast circuit as set forth in Claim 1, wherein the at least one light sensor includes a removable dome lens.

[c10] The apparatus for providing dimming control of an electronic ballast circuit as set forth in Claim 1, further comprising a molded housing, wherein the plurality of switches, each of which is positioned within the molded housing.

- [c11] The apparatus for providing dimming control of an electronic ballast circuit as set forth in Claim 1, wherein the electronic ballast circuit includes a driver and control circuit for a plurality of fluorescent lamps.
- [c12] The apparatus for providing dimming control of an electronic ballast circuit as set forth in Claim 11, wherein the driver and control circuit provides closed loop control of current that is provided to the plurality of fluorescent lamps.
- [c13] The apparatus for providing dimming control of an electronic ballast circuit as set forth in Claim 11, wherein the driver and control circuit provides overvoltage protection for the plurality of fluorescent lamps.
- [c14] The apparatus for providing dimming control of an electronic ballast circuit as set forth in Claim 1, wherein the electronic ballast circuit includes a power factor correcting function.
- [c15] A method for providing dimming control of an electronic ballast circuit comprising:
 - applying alternating current to a plurality of input voltage terminals that are electrically connected to an electronic ballast circuit;
 - receiving ambient light with at least one light sensor that

is electrically connected to the electronic ballast circuit;
and
altering an amount of electrical power applied to the electronic ballast circuit through selective activation of at least one of a plurality of switches that are electrically connected in one-to-one corresponding relationship to a plurality of resistive loads and to the electronic ballast circuit, wherein the electronic ballast circuit is electrically connected to a plurality of fluorescent lamp terminals that are capable of lighting at least one fluorescent lamp.

[c16] The method for providing dimming control of an electronic ballast circuit as set forth in Claim 15, wherein the electrical power applied to the plurality of fluorescent lamp terminals is inversely proportional to the amount of ambient light detected by the at least one light sensor.

[c17] The method for providing dimming control of an electronic ballast circuit as set forth in Claim 15, wherein the electrical power applied to the a plurality of fluorescent lamp terminals can be set at fixed predetermined levels through the selective activation of at least one of a plurality of switches.

[c18] The method for providing dimming control of an electronic ballast circuit as set forth in Claim 17, wherein the fixed predetermined levels can range from about ten

percent (10%) to about (100%).

- [c19] The method for providing dimming control of an electronic ballast circuit as set forth in Claim 15, wherein the at least one light sensor is selected from the group consisting of a photocell, a photoresistor, a photodiode, a phototransistor, a bipolar phototransistor, a photosensitive field-effect transistor and a light activated silicon-controlled rectifier.
- [c20] The method for providing dimming control of an electronic ballast circuit as set forth in Claim 15, further comprising utilizing a driver and control circuit of the electronic ballast circuit to provide closed loop control of the current that is applied to the plurality of fluorescent lamp terminals.
- [c21] The method for providing dimming control of an electronic ballast circuit as set forth in Claim 15, further comprising utilizing an overvoltage protection with the electronic ballast circuit.
- [c22] The method for providing dimming control of an electronic ballast circuit as set forth in Claim 15, further comprising utilizing a power correcting function with the electronic ballast circuit.
- [c23] The method for providing dimming control of an elec-

tronic ballast circuit as set forth in Claim 15, further comprising:

electrically connecting the plurality of switches that are electrically connected in series in one-to-one corresponding relationship to the plurality of resistive loads in parallel to the at least one light sensor; and
electrically connecting in parallel the at least one light sensor to the electronic ballast circuit.